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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

MAILED

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Group 3700

Application Number: 10/689,289
Filing Date: October 20, 2003
Appellant(s): JOHNSON, JAMES EDWARD

Steven Rosen
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 04/07/2006 appealing from the Office action mailed 10/03/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief (see the end of the section titled "Status of Claims") is correct. However, in this section Appellant summarizes the prosecution history – in which there is a discrepancy with the record. First, on the 3rd line of this section (claim 20 is referred to as independent) and this should be rather –claim 48--. Also, Appellant characterizes the Appellant's responses of August 16, 2005 and December 26, 2005 as "overcoming the Examiner's grounds for rejection." This is a highly inaccurate characterization as these grounds of rejection remain outstanding and are the very subject of this appeal.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,404,713	JOHNSON	04-1995
EP 0567277	WAGNER ET AL	10-1993
5,447,283	TINDELL	09-1995
2,956,759	CREASY ET AL	10-1960
3,302,657	BULLOCK	02-1967
2,940,692	KERRY ET AL	06-1960
3,673,802	KREBS ET AL	07-1972
4,159,624	GRUNER	07-1979

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-5, 7, 8, 10-12, 14-22, 41, 43-45, 47, 48, 50-52, 54, 55, 57-59, 61, 63-65, 67, 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (5,404,713) in view of any of Tindell (5,447,283), Creasey et al (2,956,759), Bullock (3,302,657), and Kerry et al (2,940,692) and optionally in view of any of EP 567277, Krebs et al (3,673,802) and Gruner (4,159,624). Johnson et al teach an aircraft propulsion system comprising: a gas turbine engine comprising; a fan section 32, at least one row of FLADE fan blades 5 disposed radially outwardly of and drivingly connected to the fan section, the row of FLADE fan blades radially extending across a FLADE duct 3 circumscribing the fan section, an engine inlet including a fan inlet to the fan section and an annular FLADE inlet to the FLADE duct 3; wherein the fan section includes axially spaced apart first 32 and second 34 counter-rotatable fans and the FLADE fan blades 5, are drivingly connected to one of the first and second counter-rotatable fans; further comprising a row of variable first FLADE vanes disposed axially forwardly of the row of FLADE fan blades; further comprising the row of FLADE fan blades disposed between an axially forward row of variable first FLADE vanes and an axially aft row of

second FLADE vanes; wherein the fan section includes axially spaced apart first and second counter-rotatable fans and the FLADE fan blades are drivingly connected to one of the first and second counter-rotatable fans; further comprising: a core engine 10, 18 located downstream and axially aft of the fan, a fan bypass duct located downstream and axially aft of the fan and circumscribing the core engine, and the FLADE duct circumscribing the fan bypass duct 78; wherein the fan section includes axially spaced apart first 32 and second 34 counter-rotatable fans and the FLADE fan blades are drivingly connected to one of the first and second counter-rotatable fans; further comprising: the core engine having in serial flow relationship a row of core driven fan stator vanes 86, a core driven fan with at least one row of core driven fan blades, a high pressure compressor 20, a combustor, and a high pressure turbine 24 drivingly connected to the core driven fan 38, the first and second counter-rotatable fans are radially disposed across an annular first fan duct, first and second low pressure turbines drivingly connected to the first and second counter-rotatable fans, the core driven fan is radially disposed across an annular second fan duct, a vane shroud dividing the core driven fan stator vanes into radially inner and outer vane hub and tip sections, a fan shroud dividing the core driven fan blades into radially inner and outer blade hub and tip sections, a first bypass inlet 46, 48 to the fan bypass duct 78 is disposed axially between the second counter-rotatable fan and the annular core engine inlet to the core engine, a fan tip duct across the vane tip sections of the core driven fan stator vanes and across the blade tip sections of the core driven fan blades extending to a second bypass inlet to the fan bypass

duct, and a first varying means for independently varying a flow area of the vane tip section; a second varying means for independently varying a flow area of the vane hub section; wherein the first and second varying means include independently varying vane tip sections and independently varying vane hub sections respectively; further comprising a front variable area bypass injector door in the first bypass inlet; the row of FLADE fan blades disposed radially outwardly of and drivingly connected to the second counter-rotatable fan, the high pressure turbine having a row of high pressure turbine nozzle stator vanes axially located between the combustor and a row of high pressure turbine blades of the high pressure turbine, the row of high pressure turbine blades 24 being counter-rotatable (col. 8, lines 9+) to the first low pressure turbine 28, and the row of high pressure turbine nozzle stator vanes, the row of high pressure turbine blades, the first row of low pressure turbine blades; the high pressure turbine having a row of high pressure turbine nozzle stator vanes 110 axially located between the combustor and a row of high pressure turbine blades of the high pressure turbine, the row of high pressure turbine blades being counter-rotatable to the first low pressure turbine, a row of fixed stator vanes 66 between the row of high pressure turbine blades and the first low pressure turbine; a variable throat area engine nozzle (col. 10, lines 1+) downstream and axially aft of the core engine, cooling apertures in the centerbody 72 and in a wall 222 of the engine nozzle in fluid communication with the FLADE duct. Johnson et al do not teach a fixed geometry inlet duct in direct flow communication with the engine inlet; further comprising the fixed geometry inlet duct having a two-dimensional convergent/divergent

inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet. Tindell teach a fixed geometry inlet duct 2 in direct flow communication with the engine 8 inlet with benefits including fluidic variable inlet control and enhanced inlet performance (col. 2, lines 38-44) and reduced separation and allowing optimization of surge margin (col. 5, lines 1-12) as well as enhanced handling of supersonic flows into the inlet. Creasy et al teach a fixed geometry inlet duct 130 in direct flow communication with the engine inlet 155; further comprising the fixed geometry inlet duct having a two-dimensional convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet where the engine is a turbojet engine (col. 1, lines 26+) with the engines mounted in the engine fuselage (see fig. 4) as well as enhanced handling of supersonic flows into the inlet. Creasy teaches the inlet is isentropic (col. 3, circa line 46), i.e. with minimal losses, as well as enhanced handling of supersonic flows into the inlet. Bullock teach a fixed geometry inlet duct 2 in direct flow communication with the engine 12 inlet; further comprising the fixed geometry inlet duct having a two-dimensional (rectangular, col. 2, lines 30+) convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet 12 where the engine is a gas turbine engine (col. 3, lines 7+) and benefits include the ability to control the inlet flow as

well as enhanced handling of shock waves (col. 1, lines 1-30) as well as enhanced handling of supersonic flows into the inlet. Kerry et al teach a flush fixed geometry inlet duct 37 in direct flow communication with the engine inlet to form a smooth continuation of the inlet of the engine (col. 3, lines 8+) with the engines within the aircraft fuselage as an equivalent to the wings (col. 1, lines 42+). It would have been obvious to one of ordinary skill in the art to employ a fixed geometry inlet duct with the configuration above, in order to provide a well known type of inlet for the gas turbine engine of Johnson et al with advantages including reduced flow losses and/or to allow control the inlet flow as well as enhanced handling of shock waves and/or to provide a smooth streamlined inlet and/or enhanced handling of supersonic flows into the inlet. Additionally, Johnson '713 clearly teaches one of ordinary skill in the art that his invention can be used with both variable cycle (FLADE) engines as well as non-variable cycle engines (col. 4, lines 35-41). Hence, Johnson '713 would teach one of ordinary skill in the art the equivalence of using a variable cycle engine with any other type of non-variable cycle engine. Hence, the mere use of a variable cycle (FLADE) engine would not teach one of ordinary skill in the art away from using a fixed inlet. It would have been obvious to one of ordinary skill in the art to employ the engine in the fuselage, as a well known configuration taught by the art as equivalent to the wing mounting arrangement (Kerry col. 1, lines 44+ show equivalence of mounting the engine in the fuselage or the wing; Creasy (see fig. 4) teaches mounting the engine in the fuselage and/or it is well known to all in the field that military aircraft use an engine mounted in

the fuselage with a flush inlet and also note that Johnson 5,402,638; col. 9, lines 43+ and Ball 4,463,772 also show this arrangement is utterly conventional with gas turbine engines). Johnson et al do not teach the afterburner. EP '277 teaches it is old and well known in the art to employ an afterburner (col. 5, lines 54+). It would have been obvious to employ an afterburner to augment the thrust. Johnson et al teach various aspects of the claimed invention but do not teach two low pressure turbines stages. Krebs et al teach a turbine with a high pressure turbine stage 36 and low pressure turbine stages 38 with low pressure turbines 76 is old and well known in the art. It would have been obvious to one of ordinary skill in the art to add an additional low pressure turbine stage as taught by Krebs et al, in order to facilitate more complete turbine expansion. Gruner teaches a high pressure turbine 58 and counterrotating low pressure turbines 49 and 59. It would have been obvious to one of ordinary skill in the art to employ the low pressure counterrotating turbine arrangement, as taught by Gruner, to employ a compact arrangement.

Claims 1, 3-5, 7, 8, 10-12, 14-22, 41, 43-45, 47, 48, 50-52, 54, 55, 57-59, 61, 63-65, 67, 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 567277 in view of any of Tindell (5,447,283), Creasey et al (2,956,759), Bullock (3,302,657), and Kerry et al (2,940,692) and optionally in view of any of Johnson (5,404,713) Krebs et al (3,673,802) and Gruner (4,159,624). EP '277 teaches an aircraft propulsion system comprising: a gas turbine engine comprising; a fan section 11, at least one row of FLADE fan blades 11 disposed radially outwardly of and drivingly connected to the fan section

11, the row of FLADE fan blades radially extending across a FLADE duct 34 circumscribing the fan section 11, an engine inlet including a fan inlet to the fan section and an annular FLADE inlet to the FLADE duct; further comprising a row of variable first FLADE vanes 15 disposed axially forwardly of the row of FLADE fan blades; further comprising the row of FLADE fan blades disposed between an axially forward row of variable first FLADE vanes and an axially aft row of second FLADE vanes; wherein the fan section includes axially spaced apart first 13 and second rotatable fans 11 and the FLADE fan blades 11 are drivingly connected to one of the first and second rotatable fans 11; further comprising: a core engine located downstream and axially aft of the fan 13, a fan bypass duct 16, 32 located downstream and axially aft of the fan and circumscribing the core engine, and the FLADE duct circumscribing the fan bypass duct; wherein the fan section includes axially spaced apart first and second rotatable fans and the FLADE fan blades are drivingly connected to one of the first and second rotatable fans; further comprising: the core engine having in serial flow relationship a row of core driven fan stator vanes, a core driven fan with at least one row of core driven fan blades, a high pressure compressor (unlabeled), a combustor, and a high pressure turbine (unlabeled) drivingly connected to the core driven fan, the first and second rotatable fans are radially disposed across an annular first fan duct, first and second low pressure turbines (unlabeled) drivingly connected to the first and second rotatable fans, the core driven fan is radially disposed across an annular second fan duct, a vane shroud dividing the core driven fan stator vanes into radially inner and outer vane hub and tip sections, a

fan shroud dividing the core driven fan blades into radially inner and outer blade hub and tip sections, a first bypass inlet to the fan bypass duct is disposed axially between the second rotatable fan and the annular core engine inlet to the core engine, a fan tip duct across the vane tip sections of the core driven fan stator vanes and across the blade tip sections of the core driven fan blades extending to a second bypass inlet to the fan bypass duct, and a first varying means for independently varying a flow area of the vane tip section; a second varying means for independently varying a flow area of the vane hub section; wherein the first and second varying means include independently varying vane tip sections and independently varying vane hub sections respectively; further comprising a front variable area bypass injector door in the first bypass inlet; the row of FLADE fan blades disposed radially outwardly of and drivingly connected to the second rotatable fan, the high pressure turbine having a row of high pressure turbine nozzle stator vanes axially located between the combustor and a row of high pressure turbine blades of the high pressure turbine, the row of high pressure turbine blades being rotatable to the first low pressure turbine, a row of variable low pressure stator vanes between first and second rows of low pressure turbine blades of the first and second low pressure turbines respectively, and the row of high pressure turbine nozzle stator vanes, the row of high pressure turbine blades, the first row of low pressure turbine blades, the row of variable low pressure stator vanes, and the second row of low pressure turbine blades being in serial axial and downstream relationship; the high pressure turbine having a row of high pressure turbine nozzle stator vanes axially located between the combustor and a row of

high pressure turbine blades of the high pressure turbine, the row of high pressure turbine blades being rotatable to the first low pressure turbine, a row of fixed stator vanes between the row of high pressure turbine blades and the first low pressure turbine, no vanes between the first and second rows of low pressure turbine blades of the first and second low pressure turbines respectively, and the row of high pressure turbine nozzle stator vanes, the row of high pressure turbine blades, the row of fixed stator vanes, the first row of low pressure turbine blades, and the second row of low pressure turbine blades being in serial axial and downstream relationship. EP '277 do not teach a fixed geometry inlet duct in direct flow communication with the engine inlet; further comprising the fixed geometry inlet duct having a two-dimensional convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet. Tindell teach a fixed geometry inlet duct 2 in direct flow communication with the engine 8 inlet with benefits including fluidic variable inlet control and enhanced inlet performance (col. 2, lines 38-44) and reduced separation and allowing optimization of surge margin (col. 5, lines 1-12) as well as enhanced handling of supersonic flows into the inlet. Creasy et al teach a fixed geometry inlet duct 130 in direct flow communication with the engine inlet 155; further comprising the fixed geometry inlet duct having a two-dimensional convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet

where the engine is a turbojet engine (col. 1, lines 26+) with the engines mounted in the engine fuselage (see fig. 4) as well as enhanced handling of supersonic flows into the inlet. Creasy teaches the inlet is isentropic (col. 3, circa line 46), i.e. with minimal losses, as well as enhanced handling of supersonic flows into the inlet. Bullock teach a fixed geometry inlet duct 2 in direct flow communication with the engine 12 inlet; further comprising the fixed geometry inlet duct having a two-dimensional (rectangular, col. 2, lines 30+) convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet 12 where the engine is a gas turbine engine (col. 3, lines 7+) and benefits include the ability to control the inlet flow as well as enhanced handling of shock waves (col. 1, lines 1-30) as well as enhanced handling of supersonic flows into the inlet. Kerry et al teach a flush fixed geometry inlet duct 37 in direct flow communication with the engine inlet to form a smooth continuation of the inlet of the engine (col. 3, lines 8+) with the engines within the aircraft fuselage as an equivalent to the wings (col. 1, lines 42+). It would have been obvious to one of ordinary skill in the art to employ a fixed geometry inlet duct with the configuration above, in order to provide a well known type of inlet for the gas turbine engine of Johnson et al with advantages including reduced flow losses and/or to allow control the inlet flow as well as enhanced handling of shock waves and/or to provide a smooth streamlined inlet and/or enhanced handling of supersonic flows into the inlet. It would have been obvious to one of ordinary skill in the art to employ the engine in the fuselage,

as a well known configuration taught by the art as equivalent to the wing mounting arrangement (Kerry col. 1, lines 44+ show equivalence of mounting the engine in the fuselage or the wing; Creasy (see fig. 4) teaches mounting the engine in the fuselage and/or it is well known to all in the field that military aircraft use an engine mounted in the fuselage with a flush inlet and also note that Johnson 5,402,638; col. 9, lines 43+ and Ball 4,463,772 also show this arrangement is utterly conventional with gas turbine engines). EP '277 teach the FLADE engine but does not specifically mention the counter-rotating fans or turbines. However, Johnson et al teach that it is old and well known in the art to employ counter-rotating fans or turbines in the claimed shaft arrangement, in order to facilitate a more compact arrangement. The variable stator blades between the low pressure turbine stages or the elimination of thereof is also well known depending on whether the turbines are counter-rotating or not. It would have been obvious to one of ordinary skill in the art to employ counter-rotating arrangements, in order to facilitate a compact assembly. It would have been obvious to one of ordinary skill in the art to employ variable stator blades or eliminate them, as being well known in the turbine art as well known expedients for turbine construction. EP '277 does not teach second variable FLADE blades. Johnson et al further first and second variable FLADE blades for controlling the FLADE airflow. EP '277 does not teach the cooled nozzle centerbody. Johnson et al teach; a variable throat area engine nozzle (col. 10, lines 1+) downstream and axially aft of the core engine, cooling apertures in the centerbody 72 and in a wall 222 of the engine nozzle in fluid communication with the FLADE duct. It

would have been obvious to one of ordinary skill in the art to cool the centerbody and nozzle in order to reduce infrared emissions and/or prolong its life. Krebs et al teach a turbine with a high pressure turbine stage 36 and low pressure turbine stages 38 with low pressure turbines 76 is old and well known in the art. It would have been obvious to one of ordinary skill in the art to add an additional low pressure turbine stage as taught by Krebs et al, in order to facilitate more complete turbine expansion. Gruner teaches a high pressure turbine 58 and counterrotating low pressure turbines 49 and 59. It would have been obvious to one of ordinary skill in the art to employ the low pressure counterrotating turbine arrangement, as taught by Gruner, to employ a compact arrangement.

(10) Response to Argument

In response to Appellant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the Appellant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). As pointed out above and repeated below for convenience, the secondary references provide specific reasons as to the advantages of the combination and hence there is a motivation to combine as well as specific evidentiary support of how those of ordinary skill in the art would construe the references to arrive at the claimed combination.

Tindell teach a fixed geometry inlet duct 2 in direct flow communication with the engine 8 inlet *with benefits including fluidic variable inlet control and enhanced inlet performance (col. 2, lines 38-44) and reduced separation and allowing optimization of surge margin (col. 5, lines 1-12) as well as enhanced handling of supersonic flows into the inlet.* Creasy et al teach a fixed geometry inlet duct 130 in direct flow communication with the engine inlet 155; further comprising the fixed geometry inlet duct having a two-dimensional convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet where the engine is a turbojet engine (col. 1, lines 26+) with the engines mounted in the engine fuselage (see fig. 4) as well as enhanced handling of supersonic flows into the inlet. *Creasy teaches the inlet is isentropic (col. 3, circa line 46), i.e. with minimal losses, as well as enhanced handling of supersonic flows into the inlet.* Bullock teach a fixed geometry inlet duct 2 in direct flow communication with the engine 12 inlet; further comprising the fixed geometry inlet duct having a two-dimensional (rectangular, col. 2, lines 30+) convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet 12 where the engine is a gas turbine engine (col. 3, lines 7+) and *benefits include the ability to control the inlet flow as well as enhanced handling of shock waves (col. 1, lines 1-30) as well as enhanced handling of supersonic flows into the inlet.* Kerry et al teach a flush fixed geometry inlet duct 37 in direct flow communication with the engine inlet to *form a smooth continuation of the inlet of the engine* (col. 3, lines 8+) with the engines within the aircraft fuselage as an equivalent to the wings (col. 1, lines 42+). It would have been obvious to one of ordinary skill in the art to employ a fixed geometry inlet duct with the configuration above, in order to provide a *well known type of inlet for the gas turbine engine of Johnson et al with advantages including reduced flow losses and/or to allow control the inlet flow as well as enhanced handling of shock waves and/or to provide a smooth streamlined inlet and/or enhanced handling of supersonic flows into the inlet.*

With respect to Appellant's arguments concerning FLADE engines, especially in context of the Johnson '713 reference (see col. 4 of Johnson '713 – which appears to be where

Appellant derives much of his arguments of the technical features), Appellant argues that the FLADE engine inlet (AI) would not be capable of being used with a fixed geometry inlet duct because the inlet duct is between the free stream flow area AO and AI. Appellant further argues that the secondary references engine inlet AI are not exposed to the free stream airflow AO but rather airflow from within the duct. This line of reasoning is not persuasive because Johnson '713 clearly would teach one of ordinary skill in the art what the basic requirements of a good inlet are (col. 4, lines 1 and following):

> "A good inlet must have air-handling characteristics which are matched with the engine, as well as low drag and good flow stability"

Hence, Johnson '713 clearly teaches one of ordinary skill that the inlet must be matched to the engine. While Johnson '713 does not explicitly show the use of an inlet duct, the criteria for what makes a good inlet when using an inlet duct would not change, as this criteria is universal to all engines and all inlets. Furthermore, while the fixed ducts of the prior art would place an intervening duct between the free air stream AO and the portion of the inlet immediately adjacent to the engine, Johnson would teach one of ordinary skill in the art to size the inlet ducts to the appropriate area so that the air-handling characteristics would match that of the engine. Furthermore, Johnson '713 clearly teaches one of ordinary skill in the art that his invention can be used with both variable cycle (FLADE) engines as well as non-variable cycle engines (col. 4, lines 35-41). Hence, Johnson '713 would teach one of ordinary skill in the art the equivalence of using a variable cycle engine with any other type of non-variable cycle engine. Hence, the

mere use of a variable cycle (FLADE) engine would not teach one of ordinary skill in the art away from using a fixed inlet.

Appellant's argues (middle of page 10 of the Brief):

> The Examiner has taken the elements of the primary and secondary references and the invention out of context and completely ignored the differences between the elements of the FLADE type engines and the engines disclosed in the secondary references. The Examiner failed to take into consideration differences in construction, functionality, operation and cooperation of the FLADE fan with the engine's inlet. The purposes of the FLADE type engines are contrary to the purposes of the fixed geometry inlets and the secondary references seem to inhibit the operation of Flade type engine. The Examiner failed to address these issues when they were raised by the Applicant.

In rebuttal, these arguments have been fully considered by the Examiner and are not persuasive. Note that Appellant's argument that the use of a fixed geometry inlet will inhibit the operation of the FLADE engine can be construed as a tacit admission that Appellant's own invention will not work or at the very least have inhibited operation. Appellant cannot have it both ways and argue that it is not desirable for the prior art, when the express advantages of using a fixed inlet are taught, while at the same time maintain that the Appellant's own invention would present an improvement over the prior art. Furthermore, Appellant's argument that using the fixed inlet will have differences in construction, functionality, operation and cooperation of the FLADE fan with the engine's inlet are not persuasive as in specific cases, e.g. Tindell and Bullock allow for additional control over the amount of air delivered to the engine inlet and thus enhanced operability with the advantages expressed above. Furthermore, the test for obviousness is

not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Appellant's arguments regarding Tindell's sucking of air inlet into the radially outermost portion of the inlet versus the disclosed blowing of air for variable boundary layer control are not persuasive. This line of reasoning is contrary to that of the fair disclosures of the art of record. First, Appellant combines the teachings of Johnson '713 and Tindell and arrives at a conclusion which is untenable, i.e. that the air would be sucked into the radially outermost portion of the engine. This is a complete fabrication by Appellant as there is nothing disclosed to reach this conclusion. Johnson's '713 sucking is that of sucking the entire airstream into the engine inlet and is completely unrelated to the problem of boundary layer sucking, which is what Appellant appears to be confusing the issue. Tindell teaches boundary layer blowing for the inlet duct and Appellant's apparent confusion of the facts would not prevent one of ordinary skill in the art from obtaining the benefits of both a FLADE engine and fixed inlet duct in combination.

While Appellant argues the FLADE fan/variable cycle engine is not taught in a single reference with a fixed inlet, Appellant has not provided any firm evidence how or why a FLADE fan would prevent the use of a fixed inlet from being beneficial when

considering the additional control over the air that the Tindell and Bullock references would offer. Appellant's argument that the absence of fixed geometry inlets in conjunction with variable cycle engines is not persuasive as Appellant's argument is tantamount of that of there being no anticipatory reference. The whole point of 35 USC 103 is to deal with the point of obviousness and not anticipation and that is why the sum of the teachings of the combined references must be considered and not just the teaching of one reference in isolation. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In response to Appellant's argument that there is no suggestion to combine the references, the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Additionally, Johnson '713 clearly one of ordinary skill in the art that his invention can be used with both variable cycle (FLADE) engines as well as non-variable cycle engines (col. 4, lines 35-41). Hence, Johnson '713 would teach one of ordinary skill in the art the equivalence of using a variable cycle engine with any other type of non-variable cycle engine. In this case, the reasons are expressed above and repeated below for the Board's convenience.

Tindell teach a fixed geometry inlet duct 2 in direct flow communication with the engine 8 inlet *with benefits including fluidic variable inlet control and enhanced inlet performance (col. 2, lines 38-44) and reduced separation and allowing optimization of surge margin (col. 5, lines 1-12) as well as enhanced handling of supersonic flows into the inlet.* Creasy et al teach a fixed geometry inlet duct 130 in direct flow communication with the engine inlet 155; further comprising the fixed geometry inlet duct having a two-dimensional convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet where the engine is a turbojet engine (col. 1, lines 26+) with the engines mounted in the engine fuselage (see fig. 4) as well as enhanced handling of supersonic flows into the inlet. *Creasy teaches the inlet is isentropic (col. 3, circa line 46), i.e. with minimal losses, as well as enhanced handling of supersonic flows into the inlet.* Bullock teach a fixed geometry inlet duct 2 in direct flow communication with the engine 12 inlet; further comprising the fixed geometry inlet duct having a two-dimensional (rectangular, col. 2, lines 30+) convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet 12 where the engine is a gas turbine engine (col. 3, lines 7+) and *benefits include the ability to control the inlet flow as well as enhanced handling of shock waves (col. 1, lines 1-30) as well as enhanced handling of supersonic flows into the inlet.* Kerry et al teach a flush fixed geometry inlet duct 37 in direct flow communication with the engine inlet to *form a smooth continuation of the inlet of the engine* (col. 3, lines 8+) with the engines within the aircraft fuselage as an equivalent to the wings (col. 1, lines 42+). It would have been obvious to one of ordinary skill in the art to employ a fixed geometry inlet duct with the configuration above, in order to provide a *well known type of inlet for the gas turbine engine of Johnson et al with advantages including reduced flow losses and/or to allow control the inlet flow as well as enhanced handling of shock waves and/or to provide a smooth streamlined inlet and/or enhanced handling of supersonic flows into the inlet.*

Appellant's arguments regarding the combination are not persuasive as in summary, the prior art teaches all the claimed features with express motivation to combine the simple fixed geometry inlets with the conventional FLADE gas turbine engines.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Ted Kim
Primary Examiner

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